

REMARKS

Claims 1 to 3 and 10 to 13 were pending in the present application. Applicant has amended claims 1 and 10 to 13. Claims 1 to 3 and 10 to 13 remain pending.

Non-Compliant Claims 12 and 13

Applicant's Attorney apologizes for the non-compliant claims 12 and 13 submitted in error in the December 26, 2006 Amendment. Applicant has correctly presented the amendments to claims 12 and 13 from their original form in the May 9, 2006 Amendment in this paper. Applicant thanks the Examiner for examining claims 12 and 13 for the sake of furthering prosecution.

Rejections of Claims 1 to 3 and 10 to 13

The Examiner rejected claims 1 to 3, 10, 12, and 13 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,049,889 ("Steely, Jr. et al.") in view of U.S. Patent No. 5,850,556 ("Grivna"), and further in view of U.S. Patent No. 4,520,439 ("Liepa"). The Examiner rejected claim 11 under 35 U.S.C. § 103(a) as being unpatentable over Steely, Jr. et al. in view of Grivna, and further in view of U.S. Patent No. 5,914,970 ("Gunsuals et al.").

Claim 1

Addressing Applicant's first argument that Steely, Jr. et al. does not disclose a direct memory access (DMA) command for an inter-node DMA transfer, the Examiner stated:

The Examiner disagrees. Steely teaches an inter-node transfer of data from a local node to a remote node in col. 2, lines 20-28. The transfer is a DMA transfer because a DMA operation is performed on the received data at a local memory channel adapter as detailed col. 7, lines 26-32.

The phrase "DMA transfer" as claimed is given its broadest reasonable interpretation and plain meaning as outlined in MPEP 2111. The American Heritage College Dictionary, 4th Edition defines "transfer" as: "To convey or cause to pass from one place, person, or thing to another." The term "DMA" is a modifier used to further qualify the meaning of "transfer". Since Steely teaches performing a DMA operation at a remote node on data received from a local node, the definition is satisfied and the claim limitation is met. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.

February 12, 2007 Final Office Action, pp. 2 and 3.

The Examiner appeared to argue that the claim language is too broad since the recited inter-node DMA transfer can be interpreted to include any data transfer that involves a DMA process, even if the DMA process is a data transfer from the memory of a MC adaptor card at a node to the system memory of the node after the data has been transferred from another node. Applicant strongly disagrees with the Examiner's overly broad interpretation, which is not a reasonable interpretation of the claim language. Claim 1 specifically recites "an inter-node DMA transfer of a block of data from a local node to a remote node." Claim 1 (emphasis added). Claim 1 does not recite a DMA process that occurs after the data has arrived at the node. Claim 1 is simply not related to the local process after the data has arrived, such as the DMA process disclosed by Steely, Jr. et al. for transferring the data from the memory of a MC adaptor at the node to the system memory of the node.

In an effort to expedite prosecution, Applicant has amended claim 1 to narrow the inter-node DMA transfer to be a direct transfer from one node to another. Amended claim 1 now recites "an inter-node DMA transfer of a block of data directly from a local node to a remote node." Amended claim 1 (emphasis added). On the other hand, Steely, Jr. et al. only discloses a DMA transfer of a data from the memory of a MC adaptor at a node to the system memory of the node. This is supported by a Rule 132 Declaration filed along with the November 3, 2005 Amendment and never contradicted by the Examiner. Steely, Jr. et al. simply does not disclose a DMA transfer directly from one node to another.

Addressing Applicant's second argument that Liepa does not disclose a memory copy write command that copies an entire line of memory from a local node to a remote node even when the line is only partially written with new data, the Examiner stated:

The Examiner would like to note that the system of Liepa is directed to the transmission and the reception of an entire memory word. Liepa teaches in col. 8, lines 10-14 that the entire word 56 (see Fig. 2) is provided to the data processing system. Liepa is concerned with achieving flexibility by proposing variable length memory words in systems with fixed data word length (col. 1, lines 10-25). Therefore when a variable length data is written according to Liepa, the entire data word must be transferred in order to maintain compatibility.

February 12, 2007 Final Office Action, p. 3. Applicant respectfully traverses.

Liepa does not disclose that after a partial write, an entire memory line is copied from a local node to a remote node instead of copying only the new data from the local node to the remote node. The Examiner cites to Fig. 2 to show that an entire word 56 is written in a partial write. However,

Fig. 2 shows a partial write where that a portion 82 of word 56 defined by a bit offset (A control), and a portion 84 defined by the sum (B control) of the bit offset (A control) and the field length of the data (L control) to be written, are “MASKED-NOT WRITTEN” to storage.

The so-called following bits following the Written Data are determined by combining the Bit Offset and the Field Length to generate control signals that will be referenced as the B Control. It can be seen, then, that the data word 56 provided by the requestor will have the corresponding bit positions specified by the Bit Offset and the Field Length written in the address memory word, and the leading bits shown by block 82 and the following bits shown by block 84 will be ineffective to alter the addressed memory word due to the leading and following masks that are generated. The mask generation will be described in more detail below.

Liepa, col. 8, lines 7 to 18 (emphasis added). Thus, at most, Liepa discloses a partial write but not the copying of an entire memory line to a remote node after the partial write. Even if the Examiner tries to assert that the partial write is the copying of the entire memory line to a remote node, Applicant notes that portions of the word in Liepa are masked and not written to the destination.

For the above reasons, amended claim 1 is patentable over the combination of Steely Jr. et al., Grivna, and Liepa for the above reasons.

Claims 2, 3, 10 to 13

Claims 2, 3, and 10 to 13 depend from amended claim 1 and are patentable over the cited references for at least the same reasons as amended claim 1.

Summary

In summary, claims 1 to 3 and 10 to 13 were pending in the present application. Applicant has amended claims 1 and 10 to 13. Applicant requests the Examiner to withdraw his claim objection/rejections and allow claims 1 to 3 and 10 to 13. Should the Examiner have any questions, please call the undersigned at (408) 382-0480x206.

I hereby certify that this correspondence is being transmitted prior to expiration of the set period of time by being transmitted via the Office electronic filing system in accordance with § 1.6(a) (4).

/David C Hsia/
Signature

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Date

Respectfully submitted,

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